

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

LISTING OF CLAIMS

1. (Previously amended) A golf ball comprising a core, a moisture vapor barrier layer and a cover, wherein the moisture vapor barrier layer has a moisture vapor transmission rate that is lower than that of the cover and the moisture vapor barrier layer comprises a non-ionomeric acid terpolymer or copolymer.
2. (Withdrawn) A golf ball comprising a core, a moisture vapor barrier layer, and a cover, wherein the moisture vapor barrier layer has a moisture vapor transmission rate that is lower than that of the cover, and comprises:
 - a copolymer of ethylene and methacrylic acid; and
 - a terpolymer of ethylene, a softening acrylate class ester, and a carboxylic acid.
3. (Withdrawn) The golf ball set forth in claim 2, wherein the terpolymer is a terpolymer of ethylene, methyl acrylate and acrylic acid.
- 4-6. (Cancelled)
7. (Previously amended) The golf ball as set forth in claim 1, wherein the non-ionomeric acid terpolymer or copolymer has an acid level by weight in the range of about 3% to about 25%.
8. (Previously amended) The golf ball as set forth in claim 7, wherein the acid level by weight is in the range of about 4% to about 15%.
9. (Previously amended) The golf ball as set forth in claim 8, wherein the acid level by weight is in the range of about 7% to about 11%.
10. (Previously amended) The golf ball set forth in claim 1, wherein the non-ionomeric acid terpolymer or copolymer has a melt flow index in the range between about 1 gram/10 minutes to about 500 grams/10 minutes.

Appl. No.: 10/077,081
 TC/A.U.: 3711 Docket No.: B01-74
 Reply to Office Action of May 4, 2004

11. (Previously amended) The golf ball set forth in claim 10, wherein the melt flow index is in the range of about 3 grams/10 minutes to about 60 grams/10 minutes.
12. (Previously amended) The golf ball set forth in claim 11, wherein the melt flow index is in the range of about 3 grams/10 minutes to about 35 grams/10 minutes.
13. (Previously amended) The golf ball set forth in claim 12, wherein the melt flow index is in the range of about 5 grams/10 minutes to about 25 grams/10 minutes.
14. (Previously amended) The golf ball set forth in claim 1, wherein the moisture vapor barrier layer has a thickness of about 0.030 inch or less.
15. (Previously amended) The golf ball set forth in claim 14, wherein the thickness is about 0.020 inch or less.
16. (Previously amended) The golf ball set forth in claim 15, wherein the thickness is from about 0.020 inch to about 0.005 inch.
17. (Previously amended) The golf ball set forth in claim 1, wherein the moisture vapor barrier layer is made from two semi-cured half shells compression-molded on to the core.
- 18-34. (Cancelled)
35. (Previously amended) A golf ball comprising a core, a water vapor barrier layer and a cover, wherein the water vapor barrier layer has a moisture vapor transmission rate that is lower than that of the cover and the water vapor barrier layer comprises a non-ionomeric material having a melt flow index greater than about 3 grams/10 minutes.
36. (Previously amended) The golf ball of claim 35, wherein the melt flow index is about 5 grams/10 minutes to about 500 grams/10 minutes.

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

37. (Previously amended) The golf ball set forth in claim 35, wherein the melt flow index is greater than 14 grams/10 minutes.
38. (Previously amended) The golf ball set forth in claim 35, wherein the melt flow index is in the range of about 3 grams/10 minutes to about 60 grams/10 minutes.
39. (Original) The golf ball set forth in claim 38, wherein the melt flow index is in the range of about 5 grams/10 minutes to about 25 grams/10 minutes.
40. (Original) The golf ball set forth in claim 35, wherein the thickness of the water vapor barrier layer is about 0.030 inch or less.
41. (Original) The golf ball set forth in claim 40, wherein the thickness of the water vapor barrier layer is about 0.020 inch or less.
42. (Original) The golf ball set forth in claim 41, wherein the thickness of the water vapor barrier layer is from about 0.020 inch to about 0.005 inch.
43. (Original) The golf ball set forth in claim 35, wherein the water vapor barrier layer is made from two semi-cured half shells compression-molded on to the core.
44. (Original) The golf ball set forth in claim 35, wherein the core is selected from a group consisting of natural rubber, polybutadiene, polyisoprene, styrene-butadiene, styrene-propylene-diene, ionomer resin, polyamide, polyester, thermoplastic elastomer, castable urethane, castable polyurea, castable epoxy, castable silicone, IPN, reaction injection molded polyurethane, reaction injection molded polyurea.
45. (Original) The golf ball set forth in claim 35, wherein the core comprises a polybutadiene having a Mooney viscosity in the range of about 40 to about 65.

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

46. (Original) The golf ball set forth in claim 45, wherein the core has a compression of about 30 to about 80.
47. (Cancelled)
48. (Previously amended) The golf ball set forth in claim 44, wherein the core further comprises pentachlorothiophenol or a metal salt thereof.
49. (Original) The golf ball set forth in claim 35, wherein the cover is selected from a group consisting of ionomer resins, blends of ionomer resins, thermoplastic urethane, thermoset urethane, acrylic acid, methacrylic acid, thermoplastic rubber polymers consisting of block copolymers, polyethylene, synthetic vulcanized rubber and natural vulcanized rubber.
50. (Original) The golf ball set forth in claim 35, wherein the cover comprises a thermoset polyurethane.
51. (Cancelled)
52. (Previously presented) The golf ball of claim 1, wherein the moisture vapor barrier layer has a moisture vapor transmission rate of less than about 0.95 grams·mm/m²·day.
53. (Previously presented) The golf ball of claim 1, wherein the moisture vapor barrier layer has a moisture vapor transmission rate of less than about 0.45 grams·mm/m²·day.
54. (Previously presented) The golf ball of claim 1, wherein the non-ionomeric acid terpolymer or copolymer has a moisture vapor transmission rate of about 0.01 grams·mm/m²·day to about 0.9 grams·mm/m²·day.
55. (Previously presented) The golf ball of claim 1, wherein the non-ionomeric acid terpolymer or copolymer has a melt flow index of greater than 14 grams/10 minutes.

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

56. (Previously presented) The golf ball of claim 1, wherein the non-ionomeric acid terpolymer or copolymer has a melt flow index of about 20 grams/10 minutes to about 500 grams/10 minutes.
57. (Previously presented) The golf ball of claim 56, wherein the non-ionomeric acid terpolymer or copolymer has an acid level of about 10% to about 19%.
58. (Previously presented) The golf ball of claim 1, wherein the non-ionomeric acid terpolymer or copolymer has a specific gravity of about 0.93 to about 0.96.
59. (Previously presented) The golf ball of claim 1, wherein the moisture vapor barrier layer has a Shore D hardness of about 23 to about 63.
60. (Previously presented) The golf ball of claim 1, wherein the moisture vapor barrier layer further comprises a second acid terpolymer or copolymer.
61. (Previously presented) The golf ball of claim 60, wherein at least one of the non-ionomeric acid terpolymer or copolymer and the second acid terpolymer or copolymer is present in an amount of about 25% to about 75%.
62. (Previously presented) The golf ball of claim 60, wherein the second acid terpolymer or copolymer is non-ionomeric.
63. (Previously presented) The golf ball of claim 62, wherein the non-ionomeric acid terpolymer or copolymer is a copolymer of ethylene and methacrylic acid, and the second acid terpolymer or copolymer is a copolymer of ethylene and acrylic acid.
64. (Previously presented) The golf ball of claim 60, wherein the non-ionomeric acid terpolymer or copolymer and the second acid terpolymer or copolymer are selected from the group consisting of copolymers of ethylene and carboxylic acid and terpolymers of ethylene, softening acrylate class ester, and carboxylic acid.

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

65. (Previously presented) The golf ball of claim 60, wherein the non-ionomeric acid terpolymer or copolymer and the second acid terpolymer or copolymer are selected from the group consisting of copolymers of ethylene and methacrylic acid; copolymers of ethylene and acrylic acid; and terpolymers of ethylene, an ester being methyl acrylate, n-butyl acrylate or iso-butyl acrylate, and an acid being acrylic acid or methacrylic acid.
66. (Previously presented) The golf ball of claim 60, wherein the moisture vapor barrier layer further comprises a third acid terpolymer or copolymer.
67. (Previously presented) The golf ball of claim 64, wherein the third acid terpolymer or copolymer is non-ionomeric.
68. (Withdrawn) The golf ball of claim 2, wherein at least one of the copolymer and the terpolymer is non-ionomeric.
69. (Withdrawn) The golf ball of claim 2, wherein the terpolymer is a terpolymer of ethylene, an ester being methyl acrylate, n-butyl acrylate or iso-butyl acrylate, and an acid being acrylic acid or methacrylic acid.
70. (Withdrawn) The golf ball of claim 2, wherein the moisture vapor barrier layer further comprises a copolymer of ethylene and acrylic acid.
71. (Withdrawn) The golf ball of claim 2, wherein the water vapor barrier layer has a Shore D hardness of about 23 to about 63.
72. (Withdrawn) The golf ball of claim 2, wherein the water vapor barrier layer has a moisture vapor transmission rate of less than about $0.95 \text{ grams} \cdot \text{mm} / \text{m}^2 \cdot \text{day}$.

Appl. No.: 10/077,081
TC/A.U.: 3711 Docket No.: B01-74
Reply to Office Action of May 4, 2004

73. (Withdrawn) The golf ball of claim 2, wherein the water vapor barrier layer further comprises a second non-ionomeric material having a melt flow index of greater than 14 grams/10 minutes.